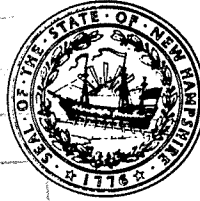


THE STATE OF NEW HAMPSHIRE

CHAIRMAN
Thomas B. Getz

COMMISSIONERS
Clifton C. Below
Amy L. Ignatius

EXECUTIVE DIRECTOR
AND SECRETARY
Debra A. Howland



Case No. DE 09-137

Exhibit No. #9
Witness Panel 2

PUBLIC UTILITIES COMMISSION

21 S. Fruit Street, Suite 10
Concord, N.H. 03301-2429

Tel. (603) 271-2431

FAX (603) 271-3878

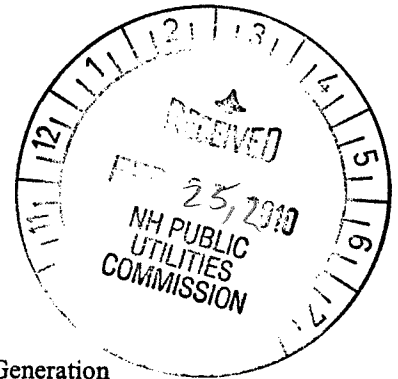
TDD Access: Relay NH
1-800-735-2964

Website:
www.puc.nh.gov

February 25, 2010

Debra A. Howland
Executive Director
New Hampshire Public Utilities Commission
21 South Fruit Street Suite 10
Concord, New Hampshire 03301

Re: Docket No. DE 09-137
Unitil Energy Systems, Inc.
Request for Approval of Investment in and Recovery of Distributed Energy Generation
Investment
Exhibit for March 2, 2010 Hearing
Staff's Benefit/Cost Analysis of the Revised Stratham Project



Dear Ms. Howland:

In its rebuttal testimony filed January 29, 2010 in the above-captioned docket, Unitil Energy Systems, Inc. (UES) modified the structure, configuration and execution of the Stratham solar photovoltaic project. The rebuttal testimony of George Gantz included an economic evaluation of that restructured project. On February 10, 2010, UES filed a revised economic evaluation of the restructured Stratham project.

Enclosed is Staff's economic evaluation of the restructured project. The sheet entitled "Restructured Stratham TRC" is the summary of Staff's benefit/cost analysis of the Stratham project as restructured by UES. Staff intends to introduce its entire analysis as an exhibit at the March 2, 2010 hearing.

I have notified UES and the Office of Consumer Advocate that Staff would be filing this analysis. I will provide all parties with an electronic copy of this filing contemporaneous with the filing with the Commission.

Please let me know if you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Suzanne Amidon".

Suzanne Amidon
Staff Attorney

Service List

**Stratham
Solar PV Facility
Total Resource Cost Test
20 Year Analysis**

<u>Benefits</u>	<u>Benefits/ Costs</u>
Capacity	
Generation	\$57,144
Transmission	\$64,350
Distribution	\$64,005
DRIPE	\$6,624
Localized Distribution	\$0
Total Capacity	\$192,123
Energy	
Winter	
Peak	\$16,975
Off Peak	\$22,075
Summer	
Peak	\$8,905
Off Peak	\$10,643
Total Energy	\$58,597
Other	
Energy DRIPE	\$12,023
CO2	\$0
REC Value	\$52,372
Total Other	\$64,395
Local Economic Dev	\$0
Total Benefits	\$315,115
Total Costs	\$482,871
Benefit/Cost Ratio	0.65

**Stratham
Solar PV Facility
Revenue Requirement
20 Yr Analysis**

Assumptions

UES Investment	\$279,212
Depreciable Basis	\$237,331
Book Life	20
Capacity (kW)	40.00
Capacity Factor (%)	13.50%
Annual Production (kWh)	47,304
Lifetime Production (kWh)	946,080
Initial Lease Payment (\$/Yr)	4600.00
Inflation Rate (%)	1.98%
Initial O&M Expense (\$/Yr)	1400.00
Monitoring & Verification (%)	2.00%
Working Capital (days)	12
Tax Rate (%)	39.61%
Real Discount Rate (%)	1.66%
Federal Tax Credit	30.00%
Depreciable Basis Adj	50.00%

Revenue Requirements Analysis

Year	Rate Base (BoY)	Rate Base (EoY)	Rate Base (Avg)	Return on Rate Base	Tax Depreciation	Book Depreciation	Unadj	Tax Adj. Book Depreciation	Deferred Tax	Amort of Tax Credit	Amort Gross Up	Grossed Up Amort	Lease Payments	O&M	Monitoring & Verification	Working Capital	Annual Rev Req	PV Factor	PV Rev Req
1	\$279,212	\$251,151	\$265,182	\$28,757	\$47,466	\$13,961		\$11,867	\$14,101	\$4,188	\$2,747	\$6,935	\$4,600	\$1,400	\$5,304	\$998	\$45,990	0.983671	\$45,238.97
2	\$251,151	\$211,808	\$231,480	\$24,252	\$75,946	\$13,961		\$11,867	\$25,382	\$4,188	\$2,747	\$6,935	\$4,691	\$1,428	\$4,630	\$871	\$40,803	0.967609	\$39,481.46
3	\$211,808	\$184,499	\$198,154	\$21,125	\$45,567	\$13,961		\$11,867	\$13,349	\$4,188	\$2,747	\$6,935	\$4,784	\$1,456	\$3,963	\$746	\$37,005	0.951809	\$35,222.03
4	\$184,499	\$164,409	\$174,454	\$18,825	\$27,340	\$13,961		\$11,867	\$6,129	\$4,188	\$2,747	\$6,935	\$4,879	\$1,485	\$3,489	\$657	\$34,265	0.936267	\$32,081.57
5	\$164,409	\$144,319	\$154,364	\$16,525	\$27,340	\$13,961		\$11,867	\$6,129	\$4,188	\$2,747	\$6,935	\$4,975	\$1,514	\$3,087	\$581	\$31,614	0.920978	\$29,115.54
6	\$144,319	\$129,644	\$136,982	\$14,844	\$13,670	\$13,961		\$11,867	\$714	\$4,188	\$2,747	\$6,935	\$5,074	\$1,544	\$2,740	\$516	\$29,649	0.905940	\$26,860.04
7	\$129,644	\$120,384	\$125,014	\$13,784	\$0	\$13,961		\$11,867	(\$4,700)	\$4,188	\$2,747	\$6,935	\$5,174	\$1,575	\$2,500	\$471	\$28,435	0.891147	\$25,339.89
8	\$120,384	\$111,123	\$115,754	\$12,724	\$0	\$13,961		\$11,867	(\$4,700)	\$4,188	\$2,747	\$6,935	\$5,277	\$1,606	\$2,315	\$436	\$27,288	0.876595	\$23,920.89
9	\$111,123	\$101,863	\$106,493	\$11,663	\$0	\$13,961		\$11,867	(\$4,700)	\$4,188	\$2,747	\$6,935	\$5,381	\$1,638	\$2,130	\$401	\$26,144	0.862281	\$22,543.76
10	\$101,863	\$92,603	\$97,233	\$10,603	\$0	\$13,961		\$11,867	(\$4,700)	\$4,188	\$2,747	\$6,935	\$5,488	\$1,670	\$1,945	\$366	\$25,003	0.848201	\$21,207.51
11	\$92,603	\$83,343	\$87,973	\$9,543	\$0	\$13,961		\$11,867	(\$4,700)	\$4,188	\$2,747	\$6,935	\$5,596	\$1,759	\$1,759	\$331	\$23,746	0.834351	\$19,855.36
12	\$83,343	\$74,082	\$78,712	\$8,482	\$0	\$13,961		\$11,867	(\$4,700)	\$4,188	\$2,747	\$6,935	\$5,707	\$1,737	\$1,574	\$296	\$22,728	0.820727	\$18,653.85
13	\$74,082	\$64,822	\$69,452	\$7,422	\$0	\$13,961		\$11,867	(\$4,700)	\$4,188	\$2,747	\$6,935	\$5,820	\$1,771	\$1,389	\$261	\$21,595	0.807325	\$17,434.57
14	\$64,822	\$55,562	\$60,192	\$6,362	\$0	\$13,961		\$11,867	(\$4,700)	\$4,188	\$2,747	\$6,935	\$5,935	\$1,806	\$1,204	\$227	\$20,465	0.794143	\$16,252.46
15	\$55,562	\$46,301	\$50,932	\$5,302	\$0	\$13,961		\$11,867	(\$4,700)	\$4,188	\$2,747	\$6,935	\$6,053	\$1,842	\$1,019	\$192	\$19,338	0.781175	\$15,106.63
16	\$46,301	\$37,041	\$41,671	\$4,241	\$0	\$13,961		\$11,867	(\$4,700)	\$4,188	\$2,747	\$6,935	\$6,173	\$1,879	\$833	\$157	\$18,214	0.768419	\$13,996.22
17	\$37,041	\$27,781	\$32,411	\$3,181	\$0	\$13,961		\$11,867	(\$4,700)	\$4,188	\$2,747	\$6,935	\$6,295	\$1,916	\$648	\$122	\$17,093	0.755872	\$12,920.38
18	\$27,781	\$18,521	\$23,151	\$2,121	\$0	\$13,961		\$11,867	(\$4,700)	\$4,188	\$2,747	\$6,935	\$6,420	\$1,954	\$463	\$87	\$15,976	0.743529	\$11,878.29
19	\$18,521	\$9,260	\$13,890	\$1,060	\$0	\$13,961		\$11,867	(\$4,700)	\$4,188	\$2,747	\$6,935	\$6,547	\$1,992	\$278	\$52	\$14,861	0.731388	\$10,869.15
20	\$9,260	\$0	\$4,630	\$0	\$0	\$13,961		\$11,867	(\$4,700)	\$4,188	\$2,747	\$6,935	\$6,676	\$2,032	\$93	\$17	\$13,750	0.719445	\$9,892.15
				\$220,815	\$237,331	\$279,212		\$237,331	\$0	\$83,764	\$54,941	\$138,705	\$111,546	\$75,831	\$41,362	\$7,785	\$555,965		\$482,871

			Annual Escalation 1.03988	Demand Reduction 47.30	Discount Rate 0.0166		
			REC Price	Demand Reduction (MWh)	REC Cost	PV Factor	Discounted Cost
1	2009	\$159.98	na	na	na	na	
2	2010	\$166.36	\$45.00	47.30	\$2,129	0.98367	\$2,094
3	2011		\$46.79	47.30	\$2,214	0.96761	\$2,142
4	2012		\$48.66	47.30	\$2,302	0.95181	\$2,191
5	2013		\$50.60	47.30	\$2,394	0.93627	\$2,241
6	2014		\$52.62	47.30	\$2,489	0.92098	\$2,292
7	2015		\$54.72	47.30	\$2,588	0.90594	\$2,345
8	2016		\$56.90	47.30	\$2,692	0.89115	\$2,399
9	2017		\$59.17	47.30	\$2,799	0.87660	\$2,454
10	2018		\$61.53	47.30	\$2,911	0.86228	\$2,510
11	2019		\$63.98	47.30	\$3,027	0.84820	\$2,567
12	2020		\$66.53	47.30	\$3,147	0.83435	\$2,626
13	2021		\$69.19	47.30	\$3,273	0.82073	\$2,686
14	2022		\$71.95	47.30	\$3,403	0.80733	\$2,748
15	2023		\$74.82	47.30	\$3,539	0.79414	\$2,811
16	2024		\$77.80	47.30	\$3,680	0.78118	\$2,875
17	2025		\$80.90	47.30	\$3,827	0.76842	\$2,941
18	2026		\$84.13	47.30	\$3,980	0.75587	\$3,008
19	2027		\$87.48	47.30	\$4,138	0.74353	\$3,077
20	2028		\$90.97	47.30	\$4,303	0.73139	\$3,147
21	2029		\$94.60	47.30	\$4,475	0.71945	\$3,220
						NPV	\$52,372